AMENDMENTS TO THE CLAIMS

1. – 7. (Cancelled.)

8.   (Currently Amended) An impurity measuring device ~~characterized by~~ comprising:

a table on which a metal sample having a fracture surface is mounted with said fracture surface facing up;

a reflection dome disposed over said table and having a downward concave reflection surface of a substantially semicircular section with an opening in the vicinity of a vertex thereof;

~~illuminating means, arranged above the table, for irradiating the fracture surface with light from a plurality of directions;~~ a plurality of light sources which are mounted along an inner edge of said concave reflection surface of said reflection dome so as to emit light toward said reflection dome;

an imaging means, disposed over said opening of said reflection dome, ~~image sensing means~~ for sensing an image of the fracture surface irradiated with the light;

a continuous tone color image processing means for processing the sensed image into a continuous tone color image; and

binarizing means for binarizing the continuous tone color image through comparison between a result of the continuous tone color image processing and a threshold value.

9. (Cancelled.)

10. (Cancelled.)

11. (Original) An impurity measuring device according to claim 10, characterized in that said light sources comprise light-emitting diodes.

12. (Cancelled.)

13. (Original) An impurity measuring device according to claim 8, characterized by further comprising:

high-luminance region detection means for detecting an image region having a higher luminance than the threshold value from the image binarized by said binarizing means; and

pixel count measuring means for measuring a pixel count of the image region detected by said high-luminance region detection means.

14. (Original) An impurity measuring device according to claim 13, characterized by further comprising impurity region recognizing means for recognizing the image region detected by said high-luminance region detection means as an impurity region when the pixel count measured by said pixel count measuring means is larger than a predetermined pixel count, and avoiding recognizing the detected image region as an impurity region when the measured pixel count is smaller than the predetermined pixel count.

15. (Original) An impurity measuring device according to claim 8, characterized in that the sample comprises aluminum.

16. (Original) An impurity measuring device according to claim 8, characterized in that said image sensing means comprises a CCD camera.

17. (New) An impurity device measuring device according to claim 8, further comprising a support column standing upward from said table, wherein said reflection dome is mounted vertically movably on said support column.

18. (New) An impurity measuring device according to claim 17, wherein said imaging means (image sensing means) is mounted above said reflection dome vertically movably on said support column.

19. (New) An impurity measuring device according to claim 11, further comprising a ring member mounted along the inner edge of said concave reflection surface of said reflection dome, wherein said light-emitting diodes are disposed on said ring member.